



## SEQUENCE LISTING

#4

<110> Garnaat, Carl W.  
Lowe, Keith S.  
Roth, Bradley A.

<120> ZmAxig1 Polynucleotides and Methods of  
Use

<130> 1016

<150> US 60/217,942

<151> 2000-07-13

<160> 21

<170> FastSEQ for Windows Version 3.0

<210> 1

<211> 1271

<212> DNA

<213> Zea mays

<220>

<221> CDS

<222> (170)...(763)

<400> 1

gcaggaactt atttgcctg cgctcccagg tctccgctcg cgtgccttcc agtctgtctc 60  
acactagctg ctgtgggacg atcgaagtgg gtgtgtcagc tagctagctg cgccgtgacc 120  
acgcacatga ccgcagtgcg cgcggggctg atcaagggaa agtgatcgg atg gag ctg 178  
Met Glu Leu  
1

gag ctc ggg ctc gcg ccg ccg aac ccg cat cag ccg ctg gct gcc gcc 226  
Glu Leu Gly Leu Ala Pro Pro Asn Pro His Gln Pro Leu Ala Ala Ala  
5 10 15

gcc gag ttc gtc ggt ctc ctc agc agc tgc gct gcc ttc tgc ggg aac 274  
Ala Glu Phe Val Gly Leu Leu Ser Ser Ser Ala Gly Ser Cys Gly Asn  
20 25 30 35

aag agg gtt ctc ggc gac gcg ttc ggg gcc gcc aag gcg gcc acg ctt 322  
Lys Arg Val Leu Gly Asp Ala Phe Gly Ala Ala Lys Ala Ala Thr Leu  
40 45 50

ccg ctc ttc gtc tgc gag gat ggc gac gga ggc ggc ggc gac cgc gac 370  
Pro Leu Phe Val Cys Glu Asp Gly Asp Gly Gly Gly Gly Asp Arg Asp  
55 60 65

cgc gac ggc gtc gtc gac cat gaa cag caa agc aac aat gta ccc agg 418  
Arg Asp Gly Val Val Asp His Glu Gln Gln Ser Asn Asn Val Pro Arg  
70 75 80

aag aag agg ctg gtg ggg tgg ccg ccg gtg aag tgc gcg cgt agg cgt 466  
Lys Lys Arg Leu Val Gly Trp Pro Pro Val Lys Cys Ala Arg Arg Arg  
85 90 95

agc tgc ggc ggc ggc tac gtg aag gtg aag ctg gaa ggg gtg ccc atc 514  
 Ser Cys Gly Gly Gly Tyr Val Lys Val Lys Leu Glu Gly Val Pro Ile  
 100 105 110 115  
 ggg cgg aag gtg gac gtg tcc atc cac ggc tgc tac cag gag ctg ctc 562  
 Gly Arg Lys Val Asp Val Ser Ile His Gly Ser Tyr Gln Glu Leu Leu  
 120 125 130  
 cgc acg ctc gag agc atg ttc cct tgc ggt aac caa caa gat cat gca 610  
 Arg Thr Leu Glu Ser Met Phe Pro Ser Gly Asn Gln Gln Asp His Ala  
 135 140 145  
 gaa gac gag gtg gtg gtc tgc cac gag cgc cgc cgt cgc cat cct tat 658  
 Glu Asp Glu Val Val Val Ser His Glu Arg Arg Arg Arg His Pro Tyr  
 150 155 160  
 gta gtc acc tac gag gac ggc gaa ggg gac tgg ttg ctc gtc gga gat 706  
 Val Val Thr Tyr Glu Asp Gly Glu Gly Asp Trp Leu Leu Val Gly Asp  
 165 170 175  
 gat gtg ccg tgg gag gtc ttt gtc aag tca gtg aag cgg ctc aag ata 754  
 Asp Val Pro Trp Glu Val Phe Val Lys Ser Val Lys Arg Leu Lys Ile  
 180 185 190 195  
 ctt gcg tag ccgacggctg gcgcctcaga gacgtcgtgt ggcccgctctc 803  
 Leu Ala \*

accaggatcg gagcagtgtg gtactcctgg gcgtcatctg cgtaataacg ttgtttctgt 863  
 cctgtgtgcc cgtacgagta cgtactgtcc tatagtaagc tagctttatg ggggtgcttca 923  
 gctttcagag catgacgaaa gcaactgatta gctgctgtca tcacatttgg ttctgtctttg 983  
 tgcgtacgg tatcgtggc gtcagtgtcg cggcagccta ggtgatctaa gcatacttac 1043  
 tatctcaagt tacttttggg ttcttgagct tgcattgtaa ttcatatacc gtatacgtgt 1103  
 gtgactcagg ggcaagctg ccttaaggca caggggtcac cggacccgat ggaatttatc 1163  
 aaatccagtg taaaatacta ttaaacactg ttcatcaata tatttgattt caataaaaaa 1223  
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1271

<210> 2  
 <211> 197  
 <212> PRT  
 <213> Zea mays

<400> 2  
 Met Glu Leu Glu Leu Gly Leu Ala Pro Pro Asn Pro His Gln Pro Leu  
 1 5 10 15  
 Ala Ala Ala Ala Glu Phe Val Gly Leu Leu Ser Ser Ser Ala Gly Ser  
 20 25 30  
 Cys Gly Asn Lys Arg Val Leu Gly Asp Ala Phe Gly Ala Ala Lys Ala  
 35 40 45  
 Ala Thr Leu Pro Leu Phe Val Cys Glu Asp Gly Asp Gly Gly Gly Gly  
 50 55 60  
 Asp Arg Asp Arg Asp Gly Val Val Asp His Glu Gln Gln Ser Asn Asn  
 65 70 75 80  
 Val Pro Arg Lys Lys Arg Leu Val Gly Trp Pro Pro Val Lys Cys Ala  
 85 90 95  
 Arg Arg Arg Ser Cys Gly Gly Gly Tyr Val Lys Val Lys Leu Glu Gly  
 100 105 110  
 Val Pro Ile Gly Arg Lys Val Asp Val Ser Ile His Gly Ser Tyr Gln  
 115 120 125  
 Glu Leu Leu Arg Thr Leu Glu Ser Met Phe Pro Ser Gly Asn Gln Gln  
 130 135 140  
 Asp His Ala Glu Asp Glu Val Val Val Ser His Glu Arg Arg Arg Arg

145		150		155		160
His Pro Tyr Val	Val Thr Tyr Glu Asp Gly Glu Gly Asp Trp Leu Leu					
	165		170		175	
Val Gly Asp Asp Val Pro Trp Glu Val Phe Val Lys Ser Val Lys Arg						
	180	185		190		
Leu Lys Ile Leu Ala						
195						

<210> 3  
 <211> 1310  
 <212> DNA  
 <213> Zea mays

<400> 3

```

cccacgctg ctttgtctac atcatgttct tcatcatcct cccagggcga cgcgtgctgc
60
tggtcttatt cagactaccg ttcgagtgc tgcattggcg acatctttct gcatcgactt
120
tgtacggcta catcgaacat atacacgaga tgtctcgtgt gaatagagtc actaatgcct
180
taagcatcgg ttactccgta ggggtacattc tggtcttctt atttgtgcat atttttattg
240
ttgtttactg attatacgag tagttataca tacatgcaca tacatatcat cacatatatc
300
acaatatctt tctaaattaa attaaaacta aaaatgacta aatttctaac accaacgaca
360
ttgtaatggt ttctccaaca actttaccta ttctacattg ttctatttcg aatttcactc
420
tataaacaac atagtctaca atggaaaaca gtgctttgta cgactatata cgcgatgtgt
480
ggctacaaca taagacaata tagtcgtttg aagattgaac ctatatatcg gtacgggtta
540
tccgtctatg tacgtgggca tgacgaacac ccgtgataac gaaggattaa cgtgcacaat
600
cataaatcca aagcaggagc ggtgcatgat gagaatcgct ctcagtactc gacataatga
660
accttacgag gtacaacagg caggcaggca gggaccaggg gccgccttta tttcaggctc
720
gctggcccca cgggcgtgct gcggtgcacga agggcactac cccaacctct caccgaaaaa
780
ccgcgctgga tcggcaaact aaacgaggtg gtgccccgtg cccactctcc acgtccacgg
840
caccatccct ctgcagccgc tcaccagcca tgccgtgtcg cggaacggca caaccacccc
900
caaccactc acgaaacccc gtcccggccg tgcccgtgtc ggtccgcgct cggcaacgag
960
gcggccccgc ctgctgagtc ccctggacac ccgacaccct gtcggccctt tgttttattc
1020
tcccgaatc tcatctgccc ccacggccga ctgcgctgcg ccgcccggat atatataccc
1080
atcggtatcg atcgatcgat cgcgtcactc acgggtagct catggtcgag cgtagcatgc
1140
aggaacttat ttgccgtgcg ctcccaggtc tccgctcgcg tgccttcag tctgtctcac
1200
actagctgct gtgggacgat cgaagtgggt gtgtcagcta gctagctgcg ccgtgaccac
1260
gcacatgacc gcagtgcgcg cggggctgat caagggaaag tgatcggatg
1310

```

<210> 4  
 <211> 1310  
 <212> DNA

<213> Zea mays

<400> 4

cccatcgctg ctttgtctac atcatgttct tcatcatcct cccagggcga cgcgtgctgc  
60  
tggtcttatt cagactaccg ttcgagtgac tgcattggcg acatctttct gcatcgactt  
120  
tgtacggcta catcgaacat atacacgaga tgtctcgtgt gaatagagtc actaatgcct  
180  
taagcatcgg ttactccgta gggtagattc tggtcttctt atttgtgcat atttttattg  
240  
ttgtttactg attatacgag tagttataca tacatgcaca tacatatcat cacatatatc  
300  
acaatatctt tctaaattaa attaaaacta aaaatgacta aatttctaac accaacgaca  
360  
ttgtaatggt ttctccaaca actttaccta ttctacattg ttctatttcg aatttcactc  
420  
tataaacaac atagtctaca atggaaaaca gtgctttgta cgactatata cgcgatgtgt  
480  
ggctacaaca taagacaata tagtcgtttg aagattgaac ctatatatcg gtacgggttaa  
540  
tccgtctatg tacgtgggca tgacgaacac ccgtgataac gaaggattaa cgtgcacaat  
600  
cataaatcca aagtaggagc ggtgcatgat gagaatcgct ctcaagtactc gacataatga  
660  
accttacgag gtacaacagg caggcaggca gggaccaggg gccgccttta tttcaggctc  
720  
gctggcccca cgggcgtgct gcggtgcacga agggcactac cccaacctct caccgaaaaa  
780  
ccgcgtgga tcggcaaact aaacgaggtg gtgccccgtg cccactctcc acgtccacgg  
840  
caccatccct ctgcagccgc tcaccagcca tgccgtgtcg cggaacggca caaccacccc  
900  
caaccactc acgaaacccc gtcccggccg tgcccgtgtc ggtccgcgct cggcaacgag  
960  
gcggcccgcg ctgctgagtc ccctggacac ccgacaccct gtcggccctt tgttttattca  
1020  
tcccgaatc tcatctgccc ccacggccga ctgcgctgcg ccgcccggat atatataccc  
1080  
atcgttatcg atcgatcgat cgcgtcactc acgggtagct catggctgag cgtagcatgc  
1140  
aggaacttat ttgccgtgcg ctcccaggtc tccgctcgcg tgccctccag tctgtctcac  
1200  
actagctgct gtgggacgat cgaagtgggt gtgtcagcta gctagctgcg ccgtgaccac  
1260  
gcacatgacc gcagtgcgcg cggggctgat caagggaaag tgatcccatg  
1310

<210> 5

<211> 3123

<212> DNA

<213> Zea mays

<400> 5

cccatcgctg ctttgtctac atcatgttct tcatcatcct cccagggcga cgcgtgctgc  
60  
tggtcttatt cagactaccg ttcgagtgac tgcattggcg acatctttct gcatcgactt  
120  
tgtacggcta catcgaacat atacacgaga tgtctcgtgt gaatagagtc actaatgcct  
180  
taagcatcgg ttactccgta gggtagattc tggtcttctt atttgtgcat atttttattg  
240

ttgtttactg attatacgag tagttataca tacatgcaca tacatatcat cacatatatc  
 300  
 acaatatattt tctaaattaa attaaaacta aaaatgacta aattttctaac accaacgaca  
 360  
 ttgtaatggt ttctccaaca actttaccta ttctacattg ttctatttcg aattttcactc  
 420  
 tataaacaac atagtctaca atggaaaaca gtgctttgta cgactatata cgcgatgtgt  
 480  
 ggctacaaca taagacaata tagtcgtttg aagattgaac ctatatatcg gtacgggttaa  
 540  
 tccgtctatg tacgtgggca tgacgaacac ccgtgataac gaaggattaa cgtgcacaat  
 600  
 cataaatcca aagtaggagc ggtgcatgat gagaatcgct ctcagtactc gacataatga  
 660  
 accttacgag gtacaacagg caggcaggca gggaccaggg gccgccttta tttcaggctc  
 720  
 gctggcccca cgggcgtgct gcggtgcacga agggcactac cccaacctct caccgaaaaa  
 780  
 ccgcgtgga tcggcaaata aaacgaggtg gtgccccgtg cccactctcc acgtccacgg  
 840  
 caccatccct ctgcagccgc tcaccagcca tgccgtgtcg cggaacggca caaccacccc  
 900  
 caaccactc acgaaacccc gtcccggccg tgcccgtgtc ggtccgcgct cggcaacgag  
 960  
 gcggcccgcg ctgctgagtc ccctggacac ccgacacctt gtcggccctt tgtttattca  
 1020  
 tcccgaatac tcattctgcc ccacggccga ctgcgctgcg ccgcccggat atatataccc  
 1080  
 atcgttatcg atcgatcgat cgcgtcactc acgggtagct catggtcgag cgtagcatgc  
 1140  
 aggaacttat ttgccgtgcg cteccaggte tccgctcgcg tgccttcag tctgtctcac  
 1200  
 actagctgct gtgggacgat cgaagtgggt gtgtcagcta gctagctgcg ccgtgaccac  
 1260  
 gcacatgacc gcagtgcgcg cggggctgat caagggaaag tgatcggatg gagctggagc  
 1320  
 tcgggctcgc gccgccgaac ccgcatcagc cgctggctgc cgcgccgag ttcgtcggtc  
 1380  
 tcctcagcag ctgggctggc tcgtgcggga acaagagggt tctcggcgac gcgttcgggg  
 1440  
 ccgccaaggc ggccacgctt ccgctcttcg tctgcgagga tggcgacgga gggggcggcg  
 1500  
 accgcgaccg cgacggcgct gtcgaccatg aacagcaaag caacaagtga gttgtgggta  
 1560  
 aaaataccga ccacgtgcgt acagggaggg tcttattata cccaaatccg atccgtgggtg  
 1620  
 tgtgtagtgt acccaggaag aagaggctgg tggggtgccc gccggtgaag tgcgcgcgta  
 1680  
 ggcgtagctg cggcggcggg tacgtgaagg tgaagctgga aggggtgccc atcgggcgga  
 1740  
 aggtggacgt gtccatccac ggctcgtacc aggagctgct ccgcacgctc gagagcatgt  
 1800  
 tcccttcggg taaccaacaa ggtgcgtacg tccccggcc gcggcgagcc ggcggcgac  
 1860  
 cggcggtgct gcggacgatg cctttctttc actgataatc atctgccgcc atcgttcttg  
 1920  
 tcccgcacag tgcccttgct tccggttcg ctcccggcac ttaacttggt cgcataact  
 1980  
 attcctgtaa cctctggcag atcatgcaga agacgaggtg gtggtctcgc acgagcgccg  
 2040  
 ccgtcgccat ccttatgtag tcacctacga ggacggcgaa ggggactggg tgctcgtcgg  
 2100

agatgatgtg ccgtgggagt acgtatcagt cactactact gtcgtctgta tgactgtatc  
 2160  
 gatgggtgacg gcaacaatat aatccaatta attattcagc gaacttaaaa acgacgttga  
 2220  
 ttctcttgca gggctcttgt caagtcagtg aagcggctca agatacttgc gtagccgacg  
 2280  
 gtcggcgctc cagagacgtc gtgtggtccg tctcaccagg atcggagcag tgtagtactc  
 2340  
 ctgggcgctca tctgcgtaat aacgttgttt ctgtcctgtg tgcccgtagc agtacgtact  
 2400  
 gtcctatagt aagctagctt tatgggggtgc ttcagctttc agagcatgac gaaagcactg  
 2460  
 attagctgct gtcatcacat ttgggttcgtc tttgtgtcgt acggtatcgc tggcgtcagt  
 2520  
 gtcgcggcag cctaggtgat ctaagcatac ttactatctc aagttacttt tggtttctg  
 2580  
 agcttgcag gtaattcata taccgtatac gtgtgtgact caggggcgaa gctgccttaa  
 2640  
 ggcacagggg tcaccggacc cgatggaatt tatcaaacc agtgtaaaat actatttaac  
 2700  
 actgttcac aatatatttg atttcaataa ttcattggagc tgacctgtg gatccatttt  
 2760  
 ctgtcttcgc ctctggtgtg actagtattt tggtttgact tttactctg tataagatat  
 2820  
 atattatacc agcgagtta tcgactgcta gttttacaag aggcttaact ctttcaattg  
 2880  
 cttattttta ttgcaacaac acactcctcc gttgttggtg tattagatgt ggttctgaat  
 2940  
 gtaaatgtca ttataggata taaatgtagt gtttcctagt tttaccctag ctttcgcatg  
 3000  
 catagtggga aagtgtacta actctcctca tgcagaaaga ggtgtggtat acctaacaaa  
 3060  
 atcatacatc actactaatc tacggataat atatataaac cgtagcgaca cagcagtgct  
 3120  
 tag  
 3123

<210> 6  
 <211> 28  
 <212> DNA  
 <213> Zea mays

<400> 6  
 agcagctagt gtgagacaga ctggaagg  
 28

<210> 7  
 <211> 28  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Zea mays

<400> 7  
 gtacattggt gctttgctgt tcatggtc  
 28

<210> 8  
 <211> 29  
 <212> DNA  
 <213> Zea mays

<400> 8  
ctccagctcc atccgatcac tttcccttg  
29

<210> 9  
<211> 29  
<212> DNA  
<213> Zea mays

<400> 9  
ctccagctcc atgggatcac tttcccttg  
29

<210> 10  
<211> 23  
<212> DNA  
<213> Zea mays

<400> 10  
cgacccatcg ctgctttgtc tac  
23

<210> 11  
<211> 36  
<212> DNA  
<213> Zea mays

<220>  
<223> Designed oligonucleotide based upon the adapter  
sequence and poly T to remove clones which have a  
poly A tail but no cDNA.

<400> 11  
tcgaccacg cgtccgaaaa aaaaaaaaaa aaaaaa  
36

<210> 12  
<211> 100  
<212> DNA  
<213> Zea mays

<400> 12  
cgatcgaagt ggggtgtgtca gctagctagc tgcgccgtga ccacgcacat gaccgcagtg  
60  
cgcgcggggc tgatcaaggg aaagtgatcg gatggagctg  
100

<210> 13  
<211> 52  
<212> DNA  
<213> Zea mays

<400> 13  
gctagctgcg ccgtgaccac gcacatgacc gcagtgcgcg cggggctgat ca  
52

<210> 14  
<211> 22  
<212> DNA  
<213> Zea mays

<400> 14  
acaaccaccc ccaaccact ca  
22

<210> 15  
<211> 22  
<212> DNA  
<213> Zea mays

<400> 15  
ctaagcactc gtgtgtcgt ac  
22

<210> 16  
<211> 1309  
<212> DNA  
<213> Zea mays

<400> 16  
cccatcgctg ctttgtctac atcatgttct tcatcactct ccccaggcga cgcgtgctgc  
60  
tgttcttatt cagactaccg ttcgagtgaac tgcattggcgt acatctttct gcatcgactt  
120  
tgtacggcta catcgaacat atacacgaga tgtctcgtgt gaatagagtc actaatgcct  
180  
taagcatcgg ttactccgta gggtacattc tgttcttctt atttgtgcat atttttattg  
240  
ttgtttactg attatacgag tagttatata tacatgcaca tacatatcat cacatatatc  
300  
acaatatttt tctaaattaa attaaaacta aaaatgacta aatttctaac accaacgaca  
360  
ttgtaatggt ttctccaaca actttaccta ttctacattg ttctatttcg aatttcactc  
420  
tataaacaac atagtctaca atggaaaaca gtgctttgta cgactatata cgcgatgtgt  
480  
ggctacaaca taagacaata tagtcgtttg aagattgaac ctatatatcg gtacgggttaa  
540  
tccgtctatg tacgtgggca tgacgaacac ccgtgataac gaaggattaa cgtgcacaat  
600  
cataaatcca aagtaggagc ggtgcatgat gagaatcgct cttagtactc gacataatga  
660  
accttacgag gtacaacagg caggcaggca gggaccaggg gccgccttta tttcaggctc  
720  
gctggcccca cgggcgtgct gcggtgcacga agggcactac cccaacctct caccgaaaac  
780  
cgcgtgggat cggcaaatca aacgaggtgg tgccccgtgc ccactctcca cgtccacggc  
840  
accatccctc tgcagccgct caccagccat gccgtgtcgc ggaacggcac aaccaccccc  
900  
aaccactca cgaaaccccg tcccggcgt gccgtgtcgc gtccgcgctc ggcaacgagg  
960  
cggcccgcgc tgctgagtc cctggacacc cgacacctg tcggcccttt gtttattcat  
1020  
cccgaatct catctgcccc cacggccgac tgcgtgcgc cgcccggata tatataccca  
1080  
tcgttatcga tcgatcgatc gcgtcactca cgggtagctc atggtcgagc gtagcatgca  
1140  
ggaacttatt tgccgtgcgc tcccaggctc ccgctcgcgt gccttcagct ctgtctcaca  
1200  
ctagctgctg tgggacgatc gaagtgggtg tgtcagctag ctagctgcgc cgtgaccacg  
1260



cacatgaccg cagtgcgcgc ggggctgac aagggaaagt gatcccatg  
1309

<210> 17  
<211> 1433  
<212> DNA  
<213> Zea mays

<400> 17  
agctagagta gtagcctgtg cttgctaccc ctggccaaca catcgtagcc tcctatattt  
60  
tcctaattctt caaataacca tctcaaaaagt tttttaaaac atcttttgag gatattgtatc  
120  
ccatagccct agagcgctaa attgactact tttagtcgat taaaagggtat tagacatcct  
180  
tacaagtcct aagtatcaaa tcaccttcta tcggctatac acaactaacg gaagttatct  
240  
ctagtcacac taacttatgt cgggtttcgc atggcagatc aaaattagct aacttttggt  
300  
ggctaataag agcaattcca aaagaacgtg taaactaatc tcaaacacaga tattaggttaa  
360  
gaatagtaat ttttcttact ccaacagttc cctcagtctt ccccaaaaaa ttaagcgttc  
420  
cgcatccaca gctcctctc ggtcgtatct tgggtgtgtt catccctccc caatccattt  
480  
ctcaacgtat cagatcatcc accgcctacg acgactgtac agtttgcgtc acatatcaca  
540  
tttaaaggaa ctgttgaggt acccatcata attcactctt aaaaaatttt agcctgctct  
600  
caataatcaa ttgggggggt aaaattttta acatcctttc ggatctaate caacttatgg  
660  
aagttagcta gctctggtcg cgctaacttc tgcgatcgc ctattagcta atactccatc  
720  
tgtcccatta tataagggtat aaccaactct gattcaaaga ccaaaaatat acttaattgt  
780  
gtctatacca cttcatcgat gtacgtatgc atagaaagag cacatcttat attgtggaac  
840  
aagaacaaaa atatgggttac gccttatatt ataagacgta gaaatcaatg gtttacaata  
900  
gccaagaata gatgttttta tttatttcct atatagatgt ttttatttat ttcctatatg  
960  
tttcacaata gccttatatt gtgccgaaaa ttaggcaca cgtgccacga acgtctgaaa  
1020  
tgtactccgc gcgtattacc atgcactacg acgtacgtag gagtatgtac gttgaaccaa  
1080  
gcacacatat atctctgaca cagtacaatg atatactaca acaacaacag tactgccccaa  
1140  
ttcatccatt ttcacgttcc atcttcgcgc tgtgacaact cgatcggcca cgcacgcaga  
1200  
cgacgacgga gcagtacttc acagaatcct ccgccactcg tcacaccaac aggcgcgcg  
1260  
tggtgcgcat gcatcatgtg catgccatcg tccgtccctt ggcgtgctc ggtagacggt  
1320  
aacgtatcct cacacatcac aagaacgaca cacagaaacc agtagccact actccatcca  
1380  
ccacgagcga gcgagcgata accctagcta gcttcaggat ccagcgagag ccc  
1433

<210> 18  
<211> 1173  
<212> DNA  
<213> Zea mays

<400> 18

ccacgcgtcc gccaccacac cagcagcgcg cgataaccct agctagcttc aggtagtagc  
60  
gagagccaat ggactccagc agcttctctc ctgccgccgg cgcgagagaat ggctcggcgg  
120  
cggcgggcgc caacaatggc ggcgctgctc agcagcatgc ggcgccggcg atcccgagagc  
180  
aggaccggct gatgccgatc gcgaacgtga tccgcatcat gcggcgcggtg ctgccggcgc  
240  
acgccaagat ctccggacgac gccaaaggaga cgatccagga gtgcgtgtcg gagtacatca  
300  
gcttcatcac gggggaggcc aacgagcggg gccagcggga gcagcgcaag accatcaccg  
360  
ccgaggacgt gctgtgggccc atgagccgcc tcggcttcga cgactacgtc gagccgctcg  
420  
gcgcctacct ccaccgctac cgcgagttcg agggcgacgc gcggggcgtc gggctcgtcc  
480  
cggggggcgc cccatcgcgc ggcgggcgacc accaccgcga ctccatgtcg ccagcggcga  
540  
tgctcaagtc ccgcgggcca gtctccggag ccgccatgct accgcaccac caccaccacc  
600  
acgacatgca gatgcacgcc gccatgtacg ggggaacggc cgtgcccccg ccggccgggc  
660  
ctcctcacca cggcggggttc ctcatgccac acccacaggg tagtagccac tacctgcctt  
720  
acgcgtacga gcccacgtac ggcggtgagc acgccatggc tgcatactat ggaggcgccg  
780  
cgtaacgcgc cggcaacggc gggagcggcg acggcagtggt cagtggcggc ggtggcggga  
840  
gcgcgtcgca cacaccgcag ggcagcggcg gcttgagca cccgcacccg ttcgcgtaca  
900  
agtagctagt tcgtacgtcg ttcgacttga gcaagccatc gatctgctga tctgaacgta  
960  
cgctgtattg tacacgcagc cagctacgta tcggcggtta gctctcctgt ttaagttgta  
1020  
ctgtgattct gtcccggcgg gctagcaact tagtatcttc cttcagttct tagtttctta  
1080  
gcagtcgtag aagtgttcaa tgcttgccag tgtgttgttt tagggcgggg gtaaaccatc  
1140  
cgatgagatt atttcaaaaa aaaaaaaaaa aaa  
1173

<210> 19

<211> 763

<212> DNA

<213> Zea mays

<400> 19

gcacgaggca agaccgtcac ctccgaggac atcgtgtggg ccatgagccg cctcggcttc  
60  
gacgactacg tcgcgcccct cggcgccctc ctccagcgca tgcgcgacga cagcgaccac  
120  
ggcgggtgaag agcgcggcgg cctgcaggg cgtgggtggc cgcgccgcgg ctccgtcgtcc  
180  
ttgccgctcc actgcccgcga gcagatgcac cacctgcacc cagccgtctg ccggcgctccg  
240  
caccagagcg tgcgcctgc tgcaggatac gccgtccggc ccgttccccg cccgatgcc  
300  
gcccgtgggt accgcatgca gggcgagac caccgcagcg tggcgggcgt ggctccctgc  
360

agctacggag gggcgctcgt ccaggccggt ggaacccaac acgttggttg attccacgac  
 420  
 gacgaggcaa gctcttcgag tgaaaatccg ccgccggagg ggcgtgccgc tggctcgaac  
 480  
 tagcctagct tctcagttcc ccgtgtacaa taagaggggc ggtcgcggcg ccgcgccgcg  
 540  
 cccttgggtt gggccgggcg ctatgctgca gtttggtttg taaactaacg agcctaggg  
 600  
 agctggtgca cgcgccac ctgcgcggac gtcgcgctcg tcgtcggcat ggacttaacc  
 660  
 ggcggggcct gttgttattt ctcaagtttg tagccaacgc actgttcggt gcgttccata  
 720  
 atttaattta ccatgttget ctgaaaaaa aaaaaaaaaa aaa  
 763

<210> 20  
 <211> 622  
 <212> DNA  
 <213> Zea mays

<400> 20  
 gcatgaataa tccccaaaac cctaaagcca gtgctccttg caccttgcca cggagcttc  
 60  
 ccaaagaagc agtggcgacc gacgaagcac cgccgccaat gggcaacaac aacaacacgg  
 120  
 aatcgggcgc ggcgacgatg gtccgggagc aggaccggct gatgcccggt gccaacgtgt  
 180  
 cccgcatcat gcgccaagtg ctgcctccgt acgccaagat ctccgacgac gcccangaag  
 240  
 tnatccaaga attgctnttc ggaatttcat cacttncgtc ctggcgaggc gaaacgaagc  
 300  
 ggtgccacac cgagcgccgc aagaccgtca cctccgaaga catcgtgtgg gccatgagcc  
 360  
 gcctcggtt cgacgactac gtcgcgcccc tcggcgccct cctccagcgc atgcgcgacn  
 420  
 acagcgaaca cgggggtgaa aacgcggcgg cctgcanggg gtngtggtn cgccgcgggt  
 480  
 cgtctncttg gcgctccctt gccgcaanag atgacaactt gcaccaaagc tctgccgggn  
 540  
 tcggaccaa actnttcctt gttgcaggaa taccggtccn gggccttcc ccccnatc  
 600  
 caaccatttg gtttccctt gc  
 622

<210> 21  
 <211> 65  
 <212> PRT  
 <213> Zea mays

<400> 21  
 Arg Glu Gln Asp Xaa Xaa Met Pro Ile Ala Asn Val Ile Arg Ile Met  
 1 5 10 15  
 Arg Xaa Xaa Leu Pro Xaa His Ala Lys Ile Ser Asp Asp Ala Lys Glu  
 20 25 30  
 Xaa Ile Gln Glu Cys Val Ser Glu Tyr Ile Ser Phe Xaa Thr Xaa Glu  
 35 40 45  
 Ala Asn Xaa Arg Cys Xaa Xaa Xaa Xaa Arg Lys Thr Xaa Xaa Xaa Glu  
 50 55 60  
 Xaa  
 65